

*Examiner's Copy*

AN 1976-33344X [18] WPIDS

TI Die surface hardening - cyclic heating to hardening temp. and cooling improves uniformity of hardened layer.

DC M24

PA (ABPH-R) AS BELO PHYS TECH

CYC 1

PI SU 461956 A 19751010 (197618)\* <--

PRAI SU 1974-1987857 19740115

AB SU 461956 A UPAB: 19930901

The heat treatment of punches and dies includes preliminary heating to 400-500 degrees C., induction heating to hardening temp., cooling followed by tempering. In order to achieve uniform hardening of the die surfaces, the initial heating involves cyclic heating to hardening temp. and cooling to 400-500 degrees C. These varying heating and cooling cycles may range from 2 to 10.